

What is claimed is:

1. A touch sensor comprising:

a resistive film covering a touch sensitive area;

at least two polygonal parallel rows of discrete conductive segments

5 disposed on the resistive film and surrounding the touch sensitive area, each edge of each row comprising one or more middle conductive segments disposed between two end conductive segments, end conductive segments at each polygon vertex in the outermost row being disjointed in the outermost row, end conductive segments at each polygon vertex in at least one inner row being joined in the inner row; and

10 electrically conductive interconnect lines connected to each of the end conductive segments in the outermost row for communicating signals to and from the resistive film for detecting an input touch applied to the touch sensitive area.

15 2. The touch sensor of claim 1 further comprising electronics configured to detect a location of the input touch by applying an electrical signal to the polygonal parallel rows of discrete conductive segments via the electrically conductive interconnect lines.

20 3. The touch sensor of claim 1, wherein the electrically conductive interconnect lines are disposed on the resistive film.

4. The touch sensor of claim 2 further comprising an electrically insulative part disposed between the interconnect lines and the resistive film.

5. The touch sensor of claim 1, wherein the electrically conductive
5 interconnect lines are discrete wires.

6. The touch sensor of claim 1, wherein the polygon is a rectangle.

7. The touch sensor of claim 1, wherein the polygon is a square.

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8. The touch sensor of claim 1, wherein the polygon is a triangle.

9. The touch sensor of claim 1, wherein an edge of a row bows inward or outward.

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10. The touch sensor of claim 1, wherein the resistive surface is non-planar.

11. The touch sensor of claim 1, wherein the number of conductive segments in a row is odd.

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12. The touch sensor of claim 1, wherein the number of conductive segments in an edge of a row is odd.

13. The touch sensor of claim 1, wherein the number of conductive segments in a row is even.

14. The touch sensor of claim 1, wherein the number of conductive segments in an edge of a row is even.

5 15. The touch sensor of claim 1, wherein the separation between a pair of adjacent rows is substantially the same as the separation between at least one other pair of adjacent rows.

16. The touch sensor of claim 1, wherein the separation between all pairs of adjacent rows is substantially the same.

10 17. The touch sensor of claim 1, wherein the resistive film comprises a conductive polymer.

18. The touch sensor of claim 1, wherein a conductive segment in a row is connected to a conductive segment in an adjacent row via a conductive bar.

15 19. The touch sensor of claim 1, wherein an electric field in the touch sensitive area is linearized to within 1%.

20. A touch sensor comprising:

a resistive film covering a touch sensitive area;

two polygonal parallel rows surrounding the touch sensitive area including an inner row and an outermost row, the inner row comprising an electrically
20 insulative corner segment in the resistive film at each vertex of the inner row, the outermost row comprising an electrically conductive corner segment disposed on the resistive film at each vertex of the outermost row, each corner segment at a

polygon vertex extending along a portion of each of the two edges intersecting at the polygon vertex; and

electrically conductive interconnect lines connected to the conductive corner segments for communicating signals to and from the resistive film for detecting an input touch applied to the touch sensitive area.

21. The touch sensor of claim 20 further comprising electronics configured to detect a location of the input touch by applying an electrical signal to the conductive corner segments via the electrically conductive interconnect lines.

22. A touch sensor comprising:

a resistive film covering a touch sensitive area;

at least one polygonal parallel row of discrete conductive segments disposed on the resistive film and surrounding the touch sensitive area, each edge of each row comprising one or more middle conductive segments disposed between two end conductive segments, end conductive segments at a first vertex in the outermost row being joined at the first vertex to form a conductive corner segment; and

an electrically insulative segment in the resistive film positioned along and oriented inward of the outermost row and proximate the first vertex, the insulating segment partially extending parallel to each of the two sides of the outermost row intersecting at the first vertex.

23. The touch sensor of claim 22 further comprising electronics configured to detect a location of an input touch applied to the touch sensitive area by applying an electrical signal to the conductive corner segment.

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24. An article comprising:

an electrically resistive film;

two polygonal parallel rows of discrete conductive segments

disposed on the resistive film, each row having a conductive corner segment at a

10 same vertex of the polygon, each corner segment extending along a portion of each of the two edges intersecting at the vertex; and

an electrically insulative region between the two corner segments.

25. A touch sensor comprising the article of claim 23.

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26. A touch sensor comprising:

a polygonal field linearization pattern disposed around a touch

sensitive area and having a first side and a second side intersecting at a first corner,

the field linearization pattern having an inner row and an outer row of discrete

20 conductive segments, the inner row having a conductive corner segment at the first corner, the conductive corner segment extending along a portion of the first and second sides of the linearization pattern; and

electronics configured to detect a location of an input touch applied to the touch sensitive area by generating an electrical current in the linearization pattern,

5 wherein a current flowing from the first side to the second side of the linearization pattern is substantially confined within the linearization pattern.